

A new species, *Symplecta (Psiloconopa) penalveri* n. sp. (Diptera, Limoniidae) from the Miocene of Spain

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ABSTRACT

A new species *Symplecta (Psiloconopa) penalveri* from Izarra, Spain (Miocene) is described. It is the first representative of Limoniidae (Diptera Nematocera) from this deposit.

KEY WORDS: Diptera, Limoniidae, *Symplecta*, Miocene, new species, fossil insects, Izarra, Spain.

INTRODUCTION

The Miocene lacustrine basin of Izarra contains a wide diversity of fossils preserved inside carbonate concretions, almost exclusively composed by calcite. Although concretions are common in the stratigraphic record those with a lacustrine origin and bearing fossil arthropods are very rare. Izarra fossils appear preserved as 3D moulds around the hole previously occupied by the body, which has completely disappeared due to decay process (Barrón et al. 2002). Izarra was first believed to be Oligocene but its age was later assigned to Miocene (Barrón et al. 1997).

Best represented arthropods in Izarra are mainly insects (although some spiders and crustaceans are also known) including orders Odonata, Orthoptera, Isoptera, Thysanoptera, Hemiptera, Homoptera, Hymenoptera, Lepidoptera, Trichoptera, Coleoptera and Diptera (Arillo 1994; Arillo et al. 1996; Arillo & Ortuño 1997a, 1997b; Nel & Arillo 1995; Nel et al. 1995, 1997; Ortuño & Arillo 1997a, 1997b, 1997c, 1997d; Peñalver et al. 1999). Also some vertebrates are known; Gaudant (2003) described a fish, *Prolebias euskadiensis* (Cyprinodontidae), and some feathers have also been recorded. Paleobotany has been widely studied (Barrón 1999; Barrón & Bernárdez 2000).

Although Diptera are frequently the dominating insect fauna in paleolake biotas, they are quite rare at Izarra, perhaps due to its peculiar taphonomy. Up to date only five fossil specimens are known: one *Tipula* sp. (Tipulidae), one Sciaroidea, one *Plecia* sp. (Bibionidae), one Syrphidae and the Limoniidae described below.

Dipteran family Limoniidae comprises recently about 12,000 species. Genus *Symplecta* Meigen has about 50

Extant species of worldwide distribution (Savchenko 1982) and in the fossil state the genus is represented by two species (Evenhuis 1994): *Symplecta (Psiloconopa) gracilis* (Théobald 1937) from the Oligocene of France and *Symplecta (Psiloconopa) savtschenkoi* (Gentilini 1984) from Monte Castellaro (Upper Miocene) of Italy (Krzemiński & Gentilini 1992). A new fossil species was found in the fossil material from the Isle of Wight (Great Britain) from the Eocene/Oligocene boundary (Krzemiński, in preparation) and the next one from Izarra, Spain (Miocene), is described below.

All these species belong to the subgenus *S. (Psiloconopa)* Zetterstedt, which is characterized by absent extra cross-vein in the r3 cell; this additional cross-vein is typical to the other subgenus, *S. (Symplecta)* Meigen.

SYSTEMATIC PALAEOONTOLOGY

Order Diptera Linnaeus, 1758

Family: Limoniidae Lindner, 1925

GENUS: *Symplecta* Meigen, 1830

SUBGENUS: *Psiloconopa* Zetterstedt, 1837

Symplecta (Psiloconopa) penalveri sp. nov.

(Fig. 1)

Etymology. after our palaeontologist colleague, Enrique Peñalver Mollá from the Museo Geominero (IGME), Madrid, Spain.

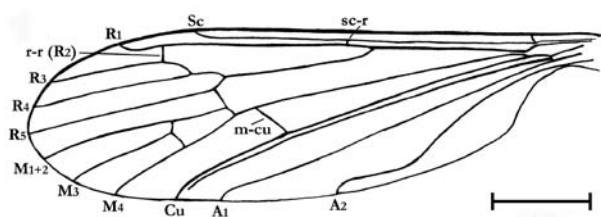


Fig. 1. *Symplecta (Psiloconopa) penalveri* n. sp. – wing venation. Scale bar 1 mm

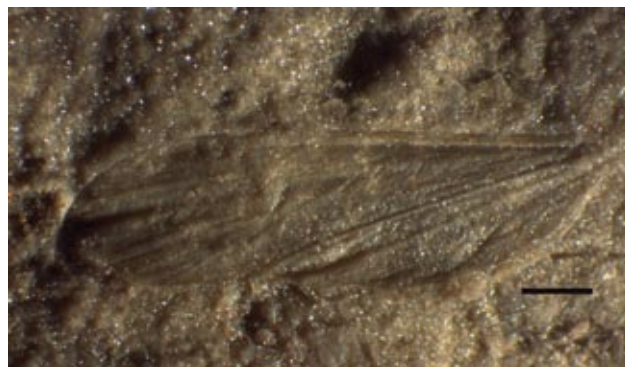


Fig. 2. *Symplecta (Psiloconopa) penalveri* n. sp. – photograph of the Holotype, MCNA-13519. Scale bar 1mm

Holotype. Specimen No. 13519, housed in the Museum of Natural Sciences of Álava, Vitoria, Spain.

Type locality and horizon. Izarra, Álava province, Spain. Level with lacustrine carbonate concretions.

Diagnosis. Sc rather short, ending opposite fork R3+4; sc-r just R2+3 short; A2 long and conspicuously subsinuous.

Description. Only single wing preserved (fig. 1), 5.8 mm long, clear. Sc rather short, ending opposite the base of R4; cross-vein sc-r distant of base of Rs; R3+4 short; R3 as long as Rs; only three medial veins are present; d cell rather small and narrow; M1+2 twice longer than d cell; cross-vein m-cu proximal of base of M1+2 and M3+4; A2 long and conspicuously subsinuous.

REMARKS

Symplecta (Psiloconopa) penalveri sp. nov. is somewhat similar to the Oligocene species *S. (P.) gracilis* Théobald; differs mainly by length of R3+4 which is very short in the new species. Also, d cell shape and the vein A2 are different. More detailed comparison is not possible, because description and drawing of *S. (P.) gracilis* are obviously incorrect.

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